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Re-designing the 'Great Australian Dream': Creating a More Sustainable Housing Future

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Honours (Design)

Faculty of Education and the Arts

Re-designing the ‘Great Australian Dream’: Creating a More Sustainable Housing Future.

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ABSTRACT

Sustainable design is a buzzword in the field of architecture, yet very few houses built in Western Australia last year had an environmentally friendly focus. Through much debate and research, designers now have a thorough understanding of the environmental impact of housing (Kibert, 2005; Roaf, 2001; Yeang, 1995). The result is that architects worldwide are now offering a more sustainable housing model. These houses are expensive and look very different to the popular project homes. Despite this environmental awareness, the homes Western Australians build appear to be growing larger, with little regard for their future sustainability. There is reluctance among Australians to accept an entirely new aesthetic of domestic architecture.

This project explores the problems with existing housing options in Western Australia in 2010. It examines the most popular form of homes in this state, the project home, through a case study of a potential re-design from the perspective of an interior designer. The housing trends analysed in the case study are looked at in terms of their sustainability and meaning within society. Through creative practice, the design of the case-study project home is explored in order to uncover more sustainable options that still retain many of the design and spatial elements of the existing model.

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Re-designing the 'Great Australian Dream': Creating a More Sustainable Housing Future

CHAPTER ONE – Introduction and background

We now have a thorough understanding of the environmental impact of housing, and we know how house designs should be changed so that they leave as little impact on our earth as possible (Helfen, 2001; Roaf, 2001; Yeang, 1995), yet we continue to build houses that do not suit our environment. There is reluctance among Australians to accept an entirely new aesthetic of domestic architecture. It's important to recognise that houses are not just places of shelter; they also embody many cultural meanings through their appearance and size. This makes them a complex form to re-design as any adjustments could change what they signify. If architects and designers can begin to understand why these project homes are so appealing to many Australians, and develop ways to adjust these homes into a more sustainable design, they can provide solutions that are attractive to a majority of home owners while building for an environmentally positive future. I intend to re-design a very popular project home, *The Amari*, in such a way as to improve its sustainability while maintaining its existing mass-market values.

Having studied Interior Design for the last three years and worked in the industry in Perth for the last four, I have been involved in substantial discussion about the importance of sustainability in design. There appears to be a growing worldwide concern for the environment which is evidenced by designers, architects, engineers and scientists spending much time theorising about and constructing buildings that are less environmentally damaging. There are a number of theorists/academics/writers who have outlined what they mean by sustainable design (Chiras, 2001; Helfen, 2001; Kibert, 2005; Roaf, 2001; Yeang, 1995) but Pritzker Prize winning Australian architect Glen Murcutt's definition of it as designing in a way that ensures you "touch this earth lightly" (cited in Drew, 1999) is perhaps the most simple and well-known in Australia. Murcutt's description emphasises the importance of designing with a view to minimising environmental impact through a reduced 'footprint'¹. Designers such as Murcutt are key players in the issue of

¹ The shape and size of the area something occupies.

sustainability as they determine the diverse modalities of the houses we live in, the cars we drive and products we use day to day (McDonough & Braungart, 2002). This necessity is only just starting to influence the decisions made by designers.

Sustainability is a topic that, in an industry driven by budgets, deadlines and client briefs, is often neglected when decisions are made about the final design outcome. The environmental efficiency of housing structures, or in other words, the performance of a property when considering impact on the environment and human health (Yudelso, 2008, p.13), is an emerging imperative for designers around the world.

Australia has been slow to embrace this new and crucial construction paradigm. It trails behind its Western counterparts, such as Sweden, Germany and the United Kingdom, in embracing energy-efficient building practices. The International Energy Agency released statistics in 2009 revealing that Australia had almost double the energy usage per capita of The United Kingdom, and within Australia, Western Australia is “the highest energy-user and the worst polluter and waste generator in the country” (McMahon, cited in Towie, N., 2010, ¶ 5). In the words of Richard Weller (2009), this means that “Western Australians, Saudi Arabians and Singaporeans share the increasingly dishonourable status of being the most unsustainable people on the planet” (p. 34). Recent studies have shown that energy performance standards for buildings in Australia are lower than most countries in the developed world (“International comparison”, 2005). In Western Australia 72 per cent of new residential buildings are project homes (Sonti, 2009), defined as “any standard house design marketed for mass production” (Dovey, 1992, p. 1) and mass consumption. The popularity of these homes means that making sustainable design a fundamental aspect of their design will be central to improving Australia’s performance in energy efficiency.

There are several examples of Western Australian architects who are putting sustainability in residential design high on their agenda. First, Fremantle-based Officer Woods Architects and their *58 Stevens St Project* (figure 1), offers a range of ‘green’ homes due for completion later this year. Second, Mac-Interactive Architects in Redfern, Sydney, have recently completed a sustainable house for a young family (figure 2). Third, local firm Gresley Abas Architects, were the 2009 winner of The

AECOM Award for Sustainable Architecture for their project, *22 Dunrobin Drive* (figure 3). All three houses were built with sustainability as the goal. The *Dunrobin Drive* project brief was “to design dwellings which showcase sustainable building design principles and offer environmentally responsive and affordable housing design solutions” (“Gresley Abas”, 2009, ¶. 2). The architects responded by designing within the constraints of a 96m², 3 bedroom, 1 bathroom housing model, orienting the house to maximise its northerly aspect and using external materials with good thermal properties. Mac-Interactive responded to their clients’ brief in a similar way with external cladding from certified sustainable yield forests and passive energy design principles (“Lookhome”, n.d.).



Figure 1². *58 Stevens St Project*, Officer Woods Architects



Figure 2. *Stirling Street Residence*, Mac-Interactive Architects



Figure 3. *22 Dunrobin Drive*, Gresley Abas Architects

² All figures are referenced on page 37

Despite the sustainable qualities of all three designs, each project has limited scope as a viable future design solution with appeal to a wide audience. Prices for houses in the *58 Stevens St Project* start at \$970,000 and, with designs somewhat redolent of factories, these houses are financially out-of-reach for most Australians and aesthetically confronting. Another example of the importance of how a house looks is the *Stirling Street Residence*. The house is causing controversy in its area with residents dubbing it 'The Ark' due to its similarities in appearance to a beached boat ("Lookhome", n.d.). It sits strikingly at odds with the rest of the traditional terrace houses on the street, and with construction costs alone for the *Stirling Street Residence* equating to around \$4500 per square metre (m²) ("Lookhome", n.d.) compared to the cost of building a project home at \$500 per m² (Hawley, 2009), it is understandable why many Australians choose a project home. In a recent paper for the Institute of Sustainable Systems and Technologies in South Australia, Karuppannan and Sivam (2009) point out that "in Australia sustainable housing has generally been constructed for the high end of the market" (p. 1). In addition, "house prices throughout Australia have risen dramatically over the past two decades and have contributed to a general decline in housing affordability, especially for first home buyers and low income households" (p. 4). For this reason alone it is understandable that the general public are choosing to build as cheaply as they can and the way to build cheaply in Australia is to build a project home.

As project homes are relatively inexpensive, it means that there are fewer financial restrictions on their size. The result is that "new homes across Australia are bigger in square metre terms than anywhere else in the world" (Santow, 2009 ¶. 2). Janet Hawley (2003) explains this trend in Australia as simply "the biggest house on the smallest block for the lowest price" (p. 1). These ready-designed houses are not only large, but are also aesthetically very similar. They are mass-marketed commodities so "our houses and our wardrobes, like our entertainment, become part of mass culture, wherein we all increasingly consume and display the same thing" (Goldberger, 1997, p.5). The sameness of their appearance and size are two things that, along with their affordability, need to be considered when re-designing projects homes. The current housing trend for large houses with a similar aesthetic are what the public demand, so this project is being approached from an interior design perspective, which means that the important exterior of the house is not changed.

For this project, I have chosen to look at residential house design in Perth from an interior design point of view, as there is a level of discord between what should be built to ensure a more sustainable future and what is actually being built – large project homes. Rather than using a combination of sustainable techniques, I have set out to choose just one simple way of changing the interior of the design that could be the least obtrusive, yet the most effective. In the following chapters I will explore, in greater detail, the literature around what makes a house sustainable, the background to and the current ideal of home ownership, and what this means in terms of the semiotic reading of house design and how it relates to the functional changes necessary for environmental sustainability.

CHAPTER TWO – What Makes a House Sustainable?

The field of sustainable architecture is constantly changing with advances in technology and knowledge of how the built form can work better with nature (Veranda de Castro, 2009 p. 2). Kim Dovey and Ceridwen Owen (2008), in their essay “Fields of sustainable architecture”, claim that “the most enduring definitions of sustainability are founded on the 1987 *Brundtland Report*, which promoted a notion of development set within environmental limits” (p. 12). The definition of what makes a building sustainable has continued to focus on the idea of minimising environmental impact. Ken Yeang (1995) emphasises that sustainable architecture is about “designing with nature and designing in an environmentally responsible way” (p. 1), and provides a framework for designing buildings that work in this way. Yeang’s idea of ‘low environmental impact design’ is also central to the ideas in architect William McDonough and Michael Braungart’s *Cradle to Cradle* (2002). Many designers, including Yeang, have drawn on McDonough and Braungart’s philosophy that sustainable design should be about “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (p. 23). Therefore, despite changes in the way that sustainable buildings are designed, it is generally agreed that the outcome should still remain about designing, building, and living “within our means” (Helfen, 2001, p. 4).

There are several key elements to sustainable house design. In a Queensland Government discussion paper (2008) the eco-efficient house is described as merely one that “uses as little energy and water as possible” (p. 4). In Western Australia, Michelle Roberts, the former Minister for Housing and Works, describes the best ways to make a home sustainable as “adopting simple conservation measures such as fitting a water efficient shower head, installing a solar or five-star gas hot water system or providing an adequate level of insulation in our homes” (“Build a better future”, n.d., ¶. 1).

Roberts’ assertion is, however, at odds with the words of Richard Fedrizzi (2008), the president of the U.S. Green Building Council, who believes something much more extreme is required “to fundamentally change the built environment” (cited in

Yudelsohn, 2008, p. xv). Many sustainable architectural theorists have a similar view to Fedrizzi (2008) believing that sustainable design constitutes more than those recommendations by government departments in Australia. Authors such as Stang and Hawthorn (2005), Roaf (2001) and Kibert (2005) are united in their view that sustainable design needs to be implemented right from the beginning of the design process, and should inform all choices and decisions an architect makes. With regards to the consideration of the environment throughout the design process, Roaf (2001) makes reference to the famous analogy coined by French architect Le Corbusier, who stated “the building is a machine for living in” (cited in Roaf, 2001, p. 15). She claims that this is “very far from the truth” (p. 15), arguing that setting a building apart from its environment is wrong. Ironically, Le Corbusier’s intention with his quote was to highlight the need for functionality in design, an issue at the heart of sustainability. Roaf contends that although a building can be controlled like a machine, ultimately “the driving force that acts upon the building to create comfort and shelter is the climate and its weather” (p. 15). In a more specific sense, Alana Stang and Christopher Hawthorne identify six key objectives when designing a sustainable house. They are: harmonising with the site; using natural heating and cooling; locating the house as close as possible to where the dwellers have to work and shop; material choice; refurbishing older buildings where possible; and building as small as possible. The first two objectives are architectural concerns. They look at passive architectural design practices that are not part of the skills of an interior designer. Material choice, refurbishment and the size of the building are areas in which an interior designer could make some positive changes.

Size Matters

Passive design principles and material selection are not the only components involved in green building design. As previously mentioned, Stang and Hawthorn (2005) cite building as small as possible as being an important factor in the construction of a sustainable house. When responding to the question, “What’s the best idea in green design?” (Keenan & Irving, 2010, p.14), Emma Williamson and Kieran Wong from Fremantle architectural firm CODA responded simply with the statement “make it smaller”. This is similar to the sentiment in an article called “Size

Matters (a lot)" (2007), in which Michael Horowitz declares that "size is one of the most significant contributing factors to the resource efficiency, and therefore the environmental impact of a home" (p. 1). Alex Wilson and Jessica Boehland (2005) believe that "a great deal of attention is paid to material selection and energy detailing in creating environmentally friendly ('green') houses but that, far too often, the more important consideration of size is overlooked" (p. 284). Their journal article "Small is Beautiful" (2005) explains this further with the statement that "it is easier to reduce the embodied³ energy of a house by making the house smaller than by searching for low embodied-energy materials" (p. 284). Stang and Hawthorne (2005) state that historically "the most successful green projects in cities are small" (p. 18). Dovey (1992) believes that larger houses "contribute to a significant increase in consumption and environmental impact" (p. 186). He points out that "the extra costs of construction are insignificant compared to the extra life-cycle costs such as heating, cooling, furniture and cleaning" (pp. 186-187). It is Horowitz (2007) who sums it up most simply when he states that "the most economical green strategy is to build less" (p. 7). This also includes the size of spaces within a house which is at odds with the open-plan design trends of recent years. As Ahmad Abas, director of Gresley Abas Architects, points out it is important that there are "doors in corridors so that open-plan areas can be contained" (personal communication, September 6, 2010).

Most architects acknowledge the need for integration of sustainability into their designs. The issue comes back to the problem that "the objective knowledge base of sustainability is ... seen as marginal to the core pursuit of architecture as an aesthetic practice" (Owen & Dovey, 2008, p. 14). Despite this, more and more architects see this clash of two fields as a positive outcome. The sustainable imperative is responsible for a productive unsettling of the field, transforming the space of possibilities and producing new ways of thinking about architecture (p. 19). Despite Roaf's critique mentioned earlier, sustainability in architecture essentially comes back to LeCorbusier's concept of buildings being "machines for living in", or a building needing a highly functional value. In the words of Daniel Chiras (2001), "we end up working hard for our houses when it should be the other way round. Our

³ Materials with low embodied energy are those that use minimal amounts of energy for all the processes associated with their production.

houses should work for us” (p. 2). If we are to improve the sustainability of housing in Australia and ensure that houses work better for those who live in them, it will be essential to address the issue of the increasing size of Australian houses. As we will see in the following chapter, however, the ‘dream’ of home ownership in Australia hasn’t always been driven by the mantra of ‘bigger is better’.

CHAPTER THREE – The Great Australian Dream

The ‘great Australian dream’⁴ is synonymous with success in Australia, and Sheehan (2001) believes that the “ideal of home ownership has for a long time been part of ‘the Australian way’” (¶. 1) and continues to be important today. Several recent studies have shown that “close to 90 per cent of Australians aspire to owning their home” (Wulff, Healy, & Reynolds, 2004, p.59). Oliver (1999) claims that the dream was “formulated 50 to 60 years ago” (p. 181). The timeframe is also identified by Horin (2005) when she claims that “just as the aberrant 1950’s shaped our idea of ‘typical’ family life, so it shaped our idea of home and neighbourhood” (¶. 10). In the early twenty-first century, “the proverbial quarter acre remains a potent symbol of an Australian ideal that can be called upon, like mateship, to make people feel sentimental” (¶. 10). However, during this time, there have been some fundamental changes to the nature of this ideal.

The History of the Dream

The ideal of home ownership began in the 1950s as Australia experienced a post war baby boom. In this period “childbirth rates soared -more than four million Australians were born between 1946 and 1961” (“Baby boomers”, n.d., ¶. 1). The resulting housing boom was encouraged by “the policies of both private and public development” which led to the construction of “free-standing single family homes” (Irving, 1985, p. 145). In 1942, Prime Minister Robert Menzies famously asked all Australians to draw upon “one of the best instincts in us ... which induces us to have one little piece of earth with a house and a garden which is ours” (cited in, “The forgotten people”, n.d., ¶. 5). During this period “the rate of home ownership increased from around 40 per cent in 1947 to over 70 per cent in 1960 and sparked a massive phase of building and construction in Australia” (“The impact of technology”, n.d., ¶. 1). From here the suburbs were born, with “dwellings on

⁴ The ‘great Australian dream’ is a phenomenon that will be referred to throughout without inverted commas for the rest of this exegesis.

quarter-acre allotments, arranged regularly along each side of the equally regular street patterns” (Irving, 1985, p. 145).

During this period the Australian dream was a simple one. The previous era’s dream of the brick bungalow home in Australia was “shattered by the realities of post-war shortages luxuries such as eaves, porches, verandahs and fire-places disappeared” while, with the increase in car-ownership, garages appeared (Irving, 1985, p. 145). Irving explains that this question of suitable post-war housing had already been addressed in Europe after the First World War. Architects such as le Corbusier and Walter Gropius not only reacted to the shortages in supply and the changes in technology but also in the radical shift in “man’s perception, vision of himself and social behaviour” (p. 145). These modernist architects believed in the mass production of the types of home that could be “built anywhere” (Khan & Jodidio, 2009, p. 13). Their houses were based on efficiency and functionalism. This style of architecture was not introduced to Australia until after the Second World War with the designs of Harry Seidler (Irving, 1985, p. 145). Irving points out that at first Seidler’s designs were viewed as radical, but elements of his designs started to become the norm in Australia with open-plan spaces and “an open patio” becoming integral to the living area of the house (p. 146).

From the mid sixties, the Australian dream had become a reality for most Australians with “seventy per cent of Australians either owning or purchasing their own home” (Sheehan, 2001, ¶. 1). This continuing affluence coupled with cheaper building technology meant that Australians could afford to pay for bigger houses. This led to “the arrival of the three-bedroom brick-veneer display home in thousands of variations” (Oliver, 1999, p. 29). The variations of houses saw the start of the project home or model home industry in Australia. During the 1960s “project house building companies grew in number, offering houses for sale as a commodity like cars or refrigerators” (Sheehan, 2001, ¶. 1). It was also during this era that the dream started to include “the recreational possibilities of their quarter-acre block” (¶. 12). Backyards emerged as a place of leisure with the inclusion of gardens with barbeques and swimming pools (¶. 12). This era heralded the Australian desire to bring the outdoors in.

By the 1970s the deluxe display home emerged. A typical style of the period was the “Spanish-style two-level house with orange Castile roof tiles teaming with white-painted brickwork” (Oliver, 1999, p. 30) that created a more extravagant look. Not only did houses become more lavish, they also became more concerned with privacy. The era saw a “shift away from the community-based street culture of the pre-war years, towards the idea of the home as a strictly private retreat” (1999, p. 31). This trend was reinforced in the 1980s which saw “the proliferation of large-scale public housing estates” (Gwyther, 2008, p. 3). Towards the end of the decade the new residential developments began to change. Instead of being a Mecca for low income, first home-buyers, they began to be populated with “more affluent, second and third-home buyers purchasing properties in master-planned estates” (p. 3). These new estates saw changes from the traditional post-war developments to house-and-land packages selling “giddily utopian promises of happy, wealthy and secure futures for all who took the chance to share the new suburban dreaming” (Gleeson, 2005, p. 3). These gated estates were “quickly snapped up by the eager dreamers” (p. 3).

The design of houses also changed in the 1980s and 1990s. With the increase in the price of land on the urban fringe, home purchasers and developers sought to “capitalise on the value of the land by building larger, more ostentatious, status-oriented houses disparagingly referred to as ‘McMansions’” (Gwyther, 2008, p. 3). Gwyther defines McMansions as a “style of architecture invariably viewed as gaudy, overblown, mass produced, cheaply constructed and environmentally destructive – much like the famous burger chain after which the style was named” (2008, p. 3). Allon describes them as “large two, or sometimes three, storey houses with double or triple garages, often designed with ‘themed façades’” (2006, p. 1). This alludes to an era of the dream in which a “disciplined work ethic” was associated with “material rewards” (p. 5). These “material rewards” were manifested in houses with features that were:

cherry-picked from bygone architectural styles: prim Georgian façades, Victorian fussiness, Queen Ann turrets, Federation finials and the occasional shady, over-constructed Californian porch. Front gardens are meticulous, and high-maintenance couch lawns are kept pristine. (Gwyther, 2008, p. 5)

The McMansions of today are reminiscent of the ‘Featurism’ that Boyd refers to in his 1960 book *The Australian Ugliness*, in particular unnecessary ornamentation which is “applied at the expense of unified functional design” (p. 9). By the late

1990s, Gwyther claims these houses were being bought by ‘Aspirationals’. She describes this group of people as “a seemingly new constituency of voters living in the urban fringes who appeared to have clawed their way out of the real battler class and into big cars, big houses and even bigger mortgages” (2008, p. 1).

The Dream Today: Resale Value

There is plenty of evidence to suggest that Australian homes are growing in size. A report published by Craig James (2009), chief economist with CommSec⁵, titled *Australians are Biggest in the World*, attracted a great deal of media attention both in Australia and globally. The data commissioned by CommSec from the Australian Bureau of Statistics shows that “the average floor area of new homes hit a record high of 214.6 square meters in the last financial year” (p. 1). This is an increase in floor plan size of “10% over the past decade” (p. 1). Wilson and Boehland (2005) make the claim that “with single-family houses, the notion that bigger is better has been a leading driver of the real estate industry” (p. 208). Abas believes that part of what drives this is a perceptual need, “people are not thinking of the house that they truly need for themselves, they’re thinking of the house that they need to sell in the future” (personal communication, September 6, 2010).

Advice given to home owners worried about the resale of their house by The Property Investors Association of Australia (2010) states that “three and four bedroom houses are the most popular among homebuyers” and therefore buying a house of this size is seen to secure “more potential buyers when it comes to resell” (¶. 6). Contrary to the demand for three and four bedroom houses are numbers from the Australian Bureau of Statistics (2007) which show an average household size of 2.6 people per household in 2006. The idea that a large house is important for resale is driven by the idea of “the phantom family of a mother and father and four kids that doesn’t really exist” (Abas, personal communication, September 6, 2010). In other words, if people can afford it they “seek extra bedroom space to use as studies, workshops and home offices” (Wulff et al., 2004, p.62). This situation has created

⁵ CommSec or Commonwealth Securities is one of Australia’s largest stockbroking firms operated by the Commonwealth Bank of Australia (“CommSec”, n.d).

“some entrenched perceptions about owning and renting that influence people’s choice of dwelling type” (p.61). These perceptions are reflected in my interview with Dale Alcock Homes client Solomon Campbell (personal communication, August 24, 2010). He explained that although a four bedroom house isn’t a necessity for his family of four, he felt they needed the fourth bedroom to use as a guest bedroom. Campbell reasons that since they were moving further away from central Perth in order to build their ‘dream home’ visitors would probably have to stay the night. So although the fourth bedroom does not serve an everyday purpose, there is still a perceived need for it.

Despite a decreasing number of people per household, the rising size of houses means that, instead of the small, energy efficient houses that are being heralded as the architectural solution to climate change, countries such as America and Australia are faced with what Fiona Allon (2006) calls “McMansion land” (p. 2). There is much criticism of these types of houses in the media and in journals (Drew, 2009; Weller, 2009; Gywther, 2008; Hawley, 2003). Both Hawley and Allon quote *Sydney Morning Herald*’s Elizabeth Farrelly’s scathing description of the Kellyville housing estate in the outer suburbs of Sydney, which states that “desolation row is every street in the new mass-produced suburbs” (cited in Allon, 2006, p. 3). Allon also references Glenn Murcutt’s opinion of current Australian housing trends, claiming it “shows a poverty of spirit and a barrenness of mind” (p. 3). Architect Tone Wheeler (cited in Edgar, 2009) sees project homes as “symbols of eighties’ excess and mausoleums to bad taste and consumerism”. He sees the idea of “the sustainable McMansions as an oxymoron” (p. 74).

The Affordable Dream

These critiques do not take into account the primary reason that so many people purchase project homes – they are cheap to build and buy. Hawley (2003) justifies the choices of many Australians in her article when she interviews architect Andrew Andersons. He indicates the attractive price of building a new project home:

You pay \$2000 a square metre for an individual architect-designed house or, because of different construction costs, for an inner-city high-rise apartment.

Project homes cost \$500 to \$550 per square metre. So you get a huge amount of house for your money. (p. 4)

With the mean disposable income for Western Australians being \$658 per week (Australian Bureau of Statistics, 2006), architecturally designed sustainable homes remain financially unviable for most, as mentioned in Chapter One. Wakely (2005) explains this further by stating that “the cost of using an architect to design a one-off tailor-made house means that less than 5 per cent of new Australian homes have ever seen the hand of a registered architect” (p. 2). He claims that “most of us buy houses the way we buy our clothes, off the rack, mass produced from housing display villages” (p. 2).

As a result, these affordable, large project homes are an appealing option for most Australians and this is something that cannot be ignored when considering a more sustainable future for housing in Australia. Statistics show that home ownership is still embedded in the Australian psyche and for many Australians the idea of building a new house in the suburbs is something to aspire towards. The dream may have moved on from the “fibro municipalities” (Gwyther, 2008, p. 3) of the 1950s to the over-sized houses of today, but despite these cosmetic changes, the great Australian dream of home ownership still maintains a connection between housing aesthetic and social values (p. 8). In the next chapter I will look at the symbolic importance of houses in Australia, and argue that it is unwise to change what houses look like without considering them as powerful symbols of the occupant’s position within society.

CHAPTER FOUR – Reading the house

Berger (2000) states that signs “have enormous significance in our lives and play an important role in our thinking and behaviour” (p. 38). We can start to understand the popularity of project homes if we consider the house as a sign or symbol which carries social meanings and values. Saussure (1966) defines semiotics as “a science that studies the life of signs in society” (p. 16). Anything may be perceived as a sign whose meaning is governed by cultural codes and conventions. At a denotative level, signs can refer in a neutral, value-free way to an object or concept, whereas at a connotative level the meaning of signs is more subjective. Furthermore, signs may be clustered together into myths. According to Barthes (1973), a myth is a “semiological chain” (p. 114), a cluster of signs that have a more complex but nonetheless well-recognised and shared meaning. Fiske and Hartley (1978) suggest that connotations and myth are the manifest signs of ideology, and therefore serve the ideological function of naturalisation, making that which is socially constructed seem normal and natural.

Residential architecture has proven to be an important text in semiotics. Barthes (1979) states that buildings are “always dream and function, expression of a utopia and instrument of a convenience” (p. 6) emphasising that architecture has two dimensions. For example, while a house denotes shelter and safety, when examined through Barthes’ perspective the house in Australia forms part of the myth of the Australian dream, or the ideal of “home-ownership and suburban living” (Allon, 2006). In *Myths of Oz* (Fiske, Hodge & Turner, 1987) the authors claim that houses become much more than just a place for shelter, and they analyse how a project home generates meaning that actualises Australian myths (see also; Venturi, 1993; Dovey, 1992). As Csikszentmihalyi and Rochberg-Halton (1981) state in their book *The Meaning of Things: Domestic Symbols and the Self*, domestic architecture and its contents provide not only “material shelter but also a shelter for those things that make life meaningful” (p. 139). The aesthetics of houses perpetuate these meanings associated with them and they become a naturalised myth of the Australian “way of life” (Allon, 2006, p. 6). Chris Bowe (2004), in his article “Sprawl Consumes All”, says that the Australian dream of “a detached single-storey dwelling on a separate

block with a hills hoist is now set in concrete as an inalienable right in our psyche” (p. 2). As Dovey (1992) points out, the idea of the detached house has become “a powerful symbol of status and identity in Australia” (p.187).

Understanding the importance of the house as a conveyor of social meaning is essential when considering the way project homes are designed. The mere fact that a project home is called a home rather than a house suggests that companies such as Dale Alcock Homes are aware that they are selling much more than a place of shelter. Gram-Hanssen and Bech-Danielsen (2004) point out that “a house and a home are not the same” (p.25). A house is “part of the material structure of society” (p.25) and it is given meaning through the way that the inhabitants maintain, use and equip the house and “through the social relations in the house and in the neighbourhood. These activities and relations are what make a house become a home” (p.25). The home can be seen as “a symbol in several different ways: the house with its style, size and location is an integral part of the power structure in society – urban structure and class structures reflect each other” (p.25). This comes back to Barthes’ (1979) idea of looking at houses both from a purely functional angle, as a means of shelter, and the point of view of the home forming part of a ‘dream’ or ‘myth’.

The Great Australian Dream and Sustainability

The aesthetics of a house is an important part of the great Australian dream. Boyd (1960) believes the way that a house looks is connected to the idea of the “competitive suburb” (p. 11) in which the myth of the dream creates a situation where “every house feels obliged to suggest a high degree of success” (p. 11). This again relates to what Boyd refers to as ‘Featurism’, the addition of architectural features that serve no practical function but to add a layer of decoration in an effort to “impress from the street” (Wakely, 2005, p. 3). Ornamentation as a perpetuation of status is redolent of Marx’s (1967) ideas of value, a concept that was developed in the mid-19th century, yet still has resonance today. The functional value of architecture, or its ‘use-value’, has been overtaken by the importance of its ‘exchange-value’. Use-value is explained by Marx as a commodity in its

“straightforward natural form” (p. 17). In this sense the design of a house should be driven by its straightforward function as a place of shelter. However, as is evident when one reads a home in semiotic terms, its exchange-value is affected by the way it signifies social status, success and familiarity. The exchange-value of a house is its value when viewed through the lens of the society in which it exists. The importance of exchange-value is evidenced by the marketing of these relatively cheap project homes as “unique creations of a craft industry that will display the owner’s taste and flair” (Dovey, 1992, p. 185). The propensity to emphasise expense through the addition of superfluous ornament and size informs the ‘check-list’ of new home owners. Wakely (2005) points out that “ornamentation makes you look rich ... tiled roofs beat tin roofs ... big houses are the best” (p. 2). Wilson and Boehland (2005) point out that “large houses are a status symbol” (p. 208). Wakely (2005) supports this claim with his argument that “if a house is a measure of earthly success then it follows, in the minds of many, that the more house you have, the more successful you must be, or appear to be in the eyes of others” (p. 2).

The Same Dream

The aesthetics of houses in the suburbs do not just relate to size and ornamentation but also to a sense of homogeneity. Hawley (2003) claims that this ‘sameness’ in the suburbs “brings a certain comfort, security, and a sense of true community” (p. 2). The similarity of the aesthetics of suburbia also reflects the idea that “when it comes to building their own homes, many people mistrust anything too unusual” (Wakely, 2005, p.7). Hawley highlights the project home aesthetic further by pointing out that “most of the popular builders offer six or more façades that can be fitted to the same interior... faux French Provincial, Tuscan, Georgian, Federation, Victoriana, Colonial, American Colonial, Australian traditional or modern” (p.4). These traditional house designs dictate a particular external façade that usually features a pitched tiled roof and brick or rendered brick walls. It is easy to see, then, why alternatives to the project homes offered by sustainable architects are not as popular. All projects mentioned in Chapter One use external building materials such as timber, corrugated iron, and concrete and feature flat or angular roofs. When asked about the box-shaped aesthetics of the Ellenbrook project Abas (personal

communication, September 6, 2010) admitted that his firm possibly “missed the fact that we should have made it look like a normal house to make people realise that a house doesn’t have to look weird to be sustainable. We just couldn’t help ourselves.” Robin Boyd (cited in Fiske, Hodge & Turner, 1987) believes that “servility and conformism are two strong messages about the national character” (p.27). In this way the great Australian dream creates an image of society in which “gratuitous differences are represented as dangerous” (Fiske, Hodge & Turner, 1987, p.32).

All of what constitutes the myth of the great Australian dream is important when considering the re-design. It is a vital part of the debate for sustainable architecture as “the primacy of the detached house image in the semiotics of status is a serious hindrance to the development of alternative forms of housing” (Dovey, 1992, p. 187). The sameness in aesthetics and the importance of a house appearing to be large in size need to be taken into consideration when changing the design in order for that design to be successful in terms of the semiotics of social status. The methodology and approach that I used to achieve this are described in the following chapter.

CHAPTER FIVE- Methodology and Approach

Research Purpose

The aim of my research is to find effective ways, from an interior design perspective, to change the design of *The Amari* to improve its sustainability yet retain its semiotic values.

Research Questions

Primary research question:

1. Can a popular Western Australian project home be re-designed to make it more sustainable in terms of its size and space planning, yet preserve the key design features that contribute to its popularity and acceptance?

Sub-questions:

2. What are the key elements that make a house sustainable in Western Australia today?
3. What are the key design trends in today's suburban Western Australian housing market?

Case Study Methodology

I have used a case study methodology to answer my research questions. The design of *The Amari*, a popular Dalë Alcock Homes project home, is the focus of my case study and I have approached it from an interior design perspective. The use of case study methodology allows me to present a detailed analysis of my research questions. In an article called "Five Misunderstandings about Case-Study Research", Bent Flyvberg highlights the fact that research is more about learning something than proving something (2006, p. 224). He claims that case studies are an ideal methodology for doing just this. By using a combination of methods to explore my case study, I will be able to learn more about my specific field of research. Niranjala

Weerakkody, in her book *Research Methods* (2009), emphasises the need for case studies to combine, or triangulate, quantitative and qualitative research (p. 237). This case study allowed me to explore my research questions through statistics, interviews, the utilisation of industry knowledge and literature related to the field.

The case study is defined by Yin (2003), as a study that “investigates a contemporary phenomenon within its real-life context” (p. 13). Understanding the context in which my case study is positioned is an important part of my research. Yin explains that case study methodology is useful for researchers who want “to cover contextual conditions – believing that they might be highly pertinent to [the] phenomenon of study” (p. 13). This is particularly true for my research questions as while the project home can be easily established as a non-sustainable piece of architecture by comparing it to ‘green architecture’ theory, it is more important and productive to consider the juxtaposition of the different contexts, sustainability and suburban Western Australia in which these houses are being built. This enables a designer to understand their popularity and enable successful adjustments to make their form more sustainable.

Research Methods and Their Phases

I organised the research into a number of phases to ensure that I answered my research questions. In the first stage I established what makes a house sustainable and tried to pinpoint one aspect of a variety of sustainable design techniques that I could focus on for my re-design that is as simple as possible and achievable with my interior design skills. I used a range of literature to explore this area. The texts included those written by architectural theorists and manuals for the design profession that outlined how to design, construct and renovate a house to make it more sustainable. The design manuals helped me understand what drafting and construction methods as well as material selection and design principles could be used to make a house design more sustainable in a practical sense. This phase also included looking at publically accessible data, from sources such as the Australian Bureau of Statistics, which informed me about the issue in more quantitative terms. It helped me understand Australia’s position worldwide in terms of our progress

towards more energy efficient buildings and sustainable practices. I also referred to texts that are within the general public's sphere of knowledge. This involved looking at websites and newspaper and magazine articles. This helped me to understand what information was available to the public in terms of increasing their understanding of the issue of sustainability residential design. It helped me to identify where the gaps were in the general awareness of the issue. Finally, as most of the literature on the topic was from overseas or from Sydney or Melbourne, I interviewed green architect Ahmad Abas to garner more Western Australian-specific information. In the interview I asked him what he felt were the most important principles in sustainable design and asked him to reflect on the design choices he made in the firm's 22 *Dunrobin Drive* project, which focussed on designing a sustainable prototype for Western Australian conditions. This contributed to my understanding of sustainable design decisions that could be made.

In the second phase of research I sought to gain a better understanding of the current housing trends and how it has changed over time to what it is today. I used a combination of texts which included those that outlined the history of house design in Australia, academic theory on the reasons for the changes that have occurred and commentary on the current residential design trends. I also utilized statistical information from the Australian Bureau of Statistics which revealed changes in the size of houses in Australia and the popularity of project homes. As in the first phase of research, I used articles from magazines and newspapers to gain an idea of what was being read in this area in the public domain. The information collected in this phase led to the selection of the design that I would use for my case study. It was at this point that I was able to identify *The Amari*, a Dale Alcock Homes project home, as a design that is typical of recent housing trends. In order to understand further what current factors are desirable in the design of a house in Western Australia now, I interviewed two project home clients. One interview was with a person who has recently moved into a newly built project home and the other was with a current Dale Alcock Homes client. In both interviews I asked questions of the home owners that gave me information about what rooms they felt were important to be included in a house and what they preferred in terms of the layout of the space. This allowed me to compare the interviewees' answers with the literature I had read on the topic to identify if it reflected the reality of what people were actually demanding of the

industry. It also allowed me to write a brief that I could design to in the final stage of the research.

The third phase involved an analysis of what I had already learned in the first two parts of my research. I sought to understand why there was such a divide between what architectural theorists recommended in terms of sustainable housing design and the reality of the current housing trends. I used semiotics as a way of explaining this divide and drew upon literature from seminal theorists such as Barthes (1979), Venturi (1993) and Dovey (1992). All three of the interviews I conducted also helped me in this phase. In my interview with Abas I asked questions about the design decisions his firm had made about the *22 Dunrobin Drive* project with regards to the aesthetics of the design. In a similar sense I asked questions of the project home clients concerning their attraction to the ‘look’ of project homes. It was at this point that I identified the façade as such an important part of the design of a house in terms of it symbolising status and success in our society. This was an important phase as it allowed me to integrate ideas of sustainability into my project in a way that I feel would be acceptable to a wider audience than the existing sustainable models currently offered by architects.

The last phase of the project was the design phase. This was the crux of the research as it was the point where, using all the information that I collected through my exegesis, I could start to explore solutions to my case-study of the re-design of *The Amari*. Because the process and outcomes of the re-design are integrally linked, these are explained in detail in the next chapter.

CHAPTER SIX- *The Amari* Re-design

As stated earlier, the design process for my project was essentially one of interior design. The research had shown that the market preferred the status quo for the exterior aesthetic of the project home, particularly those facets facing the street. My interview with green architect Ahmad Abas revealed that architects could concurrently design for a populist aesthetic and a sustainable standard, which is what I endeavoured to achieve in my re-design. An illustrative representation of the steps I took towards the final design outcomes are represented in a visual diary. I felt that it was important to document these steps in this visual form to show how the re-design was guided by the research I did for my exegesis. In this way, the visual diary and the exegesis complement each other. To further this, although my design was purely conceptual and there was no actual client, I felt it important to approach the re-design in a way that closely followed the methods used by interior designers. These steps are also represented in the visual diary and I drew on my work experience and studies in the field to recreate a design process that I felt was observable in the industry.

One step in keeping the design process true to the industry was to design within the parameters of a brief. I created the brief (appendix 1) by analysing the existing *Amari* floor plan and referring to my interviews with the two project home clients. I wanted to retain as many of the elements of the original design and take into account what my interviewees felt was important in the design of a house. The key elements to preserve were; firstly, keeping the interior design as open plan as possible and maintain the four bedroom, two bathroom size; and secondly, there needed to be a laundry, a pantry, living and dining rooms and a walk-in-robe and ensuite for the master bedroom. The brief then became part of the focus of my re-design, which included my overarching aim in terms of sustainability. This was to reduce the house's overall footprint of 292 m², and create spaces inside the house that could be closed off into smaller areas while still retaining an open-plan feel. In addition, in order to retain the wide appeal of the house I needed to be mindful of not changing the exterior aesthetics and size of the front façade.

After establishing what I felt was a realistic brief to work from, and identifying the key findings from my research, I started searching for 'inspiration images' for the re-design. In an actual job these images are used to act as a way for the designer to communicate the ideas that are driving their design to the client and gain some creative stimulus for the rest of the design process. This was a useful step for my project as it provided a visual representation of the jarring differences in aesthetics between the sustainable and typical suburban houses.

The next step in the re-design process involved analysing the existing design in terms of what needed to be changed according to my research (appendix 2). There were four main problems with the existing design that I felt needed addressing. The first issue was with the master suite. This area includes an ensuite and walk-in-robe and measures 34 m². It is a very large space for a room that is only usually used for a small part of the day. Secondly, the original design has a very large open-plan area occupying almost half of the overall space of the house at 134 m². This area has no doors to any of the corridors, preventing the occupants from closing areas off and resulting in energy-intensive heating and cooling requirements. Within this same area, the third problem I identified was the home theatre. It is positioned in the centre of the house and therefore has no windows. This means that at any time lights must be turned on when entering the room, which again is ineffective as an energy-saving space. Finally, the large footprint of the house means that on the recommended block of land⁶ for *The Amari* there is little room at the sides of the house. This prevents solar radiation, or passive heating techniques, in winter. It also means that the sides of the house are not wide enough to be used for any other sustainable practices such as a water tank or the planting of plants for shading.

At this point I was ready to start working on the design. From my experience of working in this field I have observed that an interior designer would begin space-planning by loosely trying to fit the requirements of the brief into the space provided for it. This was an important part of my design process as reducing the square meterage of the design was my main aim. This was very challenging as I wanted to fit all the elements of the brief into a smaller space while still keeping it open-plan

⁶ The recommended block size for *The Amari* is approximately 17.5m wide, 29m long with a total area of at least 560sqm (A. Owen personal communication, August 11, 2010).

and, in that sense, spacious. In addition to space planning I also started exploring some alternatives to the project home design in a more unrestricted way. This is labelled, 'concept designs' in my visual diary and mainly reflects the initial ideas I had to completely change the design of the house with little regard to the brief or my research. These represent my reactions to the sustainable inspiration images which I found creatively stimulating. Ultimately, these were unusable in the final design as they were far too aesthetically at odds with the original design. This is also a step often taken by an interior designer where, for a period of time, the designer thinks of ideas without the constraints of the brief in mind, allowing more creativity which could eventually be used in an adapted way in the final design. From here, in a typical interior design scenario, these rough hand drawn plans and sketches are drafted up into the final floor plan and often worked up into a computer-generated 3D model which allows images to be produced that make it easier for the client to visualise the final design.

The Design Outcomes

As stated earlier, my main aim was to reduce the footprint of the house overall and the size of the spaces within the design. The outcome of the re-design meant that I reduced the floor plan by approximately 25 per cent (appendix 3). The original footprint measures 292 m² and the re-design 222 m². I achieved this in several ways. As previously mentioned, I had identified the master bedroom as an unnecessarily large area and reduced it from 34 to 29 m². I also removed the home office and the computer nook from the design and reduced the size of the laundry. I included an option for a European laundry⁷ where the laundry space could instead serve as a small computer room. In addition to reducing the footprint, another change involved replacing or re-labelling spaces. The home theatre was replaced with an internal courtyard. This meant that the centre of the house is provided with much more natural light and cross-breezes. The fourth bedroom I re-named as 'spare-bed/study' to encourage a more flexible use of the space. Concerns for the resale value of

⁷ A washing machine, dryer and sink in a cupboard.

houses due to the current popularity for four bedroom two bathroom houses⁸ drive client choices in the project home industry, so I felt it was important to keep this aspect as part of the brief but I kept in mind the fact that the most households don't actually need to use this room as a bedroom. In this way the fourth bedroom could serve as a replacement for the rooms I removed in order to reduce the footprint.

In addition to these large changes, I made some small but significant modifications to the floor plan. One such change involved the addition of a sliding door to partition off the living and dining spaces. I did this for two reasons. Firstly, I needed to compensate for the loss of the home theatre in the original design and ensure the living room would now be the space that the occupants would use to watch television. In order for it to still function in the way that the home theatre does it is necessary to make the room dark during the day so the sliding door blocks out any light from the courtyard and kitchen windows. I have also specified block-out blinds in this room to make it dark during the day. This also helps in terms of energy conservation as they keep out the heat in summer and the cold in winter. Secondly, from a sustainability point of view, the incorporation of the room divider was so that the large open-plan living area could be divided up into two smaller spaces that would require less energy to heat and cool. For the same reason I added doors to all corridors which allow sections of the house to be closed off.

All the changes I made to the design contributed to a better outcome in terms of sustainability for *The Amari* (appendix 4). The reduced overall footprint of the design has allowed for extra space along the sides of the house to be used in a more sustainable way. Assuming the back of the house faces north, the new design has a set-back of at least six metres from the neighbouring houses allowing for more solar radiation along the sides of the house in winter and making room available for the planting of deciduous trees, especially along the east façade of the house, creating shading in summer and allowing the sun to warm the walls for passive heating in winter. There is a windowless space along the wall of the master suite which can house a water tank and the area outside the kitchen has ample space for an outdoor clothes line, which contributes to reductions in water and energy use respectively for

⁸ The Australian Bureau of Statistics (2008) has reported that "over a third of separate houses (37%) had four or more bedrooms in 2008" (¶, 1).

the residents. The smaller size of the house also makes room for a large alfresco area. As an option the clients could decide to include an outdoor kitchen in this space, thus keeping the heat out of the house and making use of the coolness of the evenings in Perth in summer. Finally inside the house, one of the walls of the courtyard could be used as a 'green wall', or a wall with plants growing vertically on it which provides better sound insulation, reduced stormwater run-off and the trapping of pollutants ("HIA greensmart", 2010). Where it is not possible to orient the house such that the back faces North, the interior design considerations can still affect increased sustainability.

I think the most important result of the changes is the potential reduction in energy use for the owners of the re-designed *Amari*. As stated in Chapter Two, a smaller house generally demands less energy in terms of heating, cooling and lighting, from where approximately 43 per cent of the energy in a house is used ("The power is yours," 2010, p. 79). Therefore the reduced footprint would result in reduced energy needs. The other energy saving measures, such as the partitioning off of spaces within the house, the clothes line and the maximisation of solar radiation when necessary are all functions of a smaller footprint, and important factors in the creation of a more energy efficient house. With energy prices predicted to increase by 77 per cent between now and 2013 ("Further steep power price hikes predicted", 2010), making our houses more energy efficient is not just an issue of sustainability but also one of affordability. With these predicted price rises for energy in Australia, it would not be unreasonable to presume that in the future project home building companies will need to address this issue in terms of the way they market their houses. A house that uses less energy will surely be more attractive to people looking to save on energy bills.

The Appeal of the Re-design

The final part of my design process concentrated on creating some 3D images of the re-design. These are usually used to convey to the client what the re-design would look like to gain their approval before construction. For my project the images I produced of the courtyard (appendix 5) serve to demonstrate how this new design

element would look in the space, adding lots of natural light to the living space and giving the feeling of being more connected with the outdoors when in the kitchen and living room. The images of the façades of the old *Amari* and the new design (appendix 6) are to demonstrate how little the changes to the floor plan affected the appearance of the front of the house. As I have previously established, the appearance of a house from the street is very important so I was conscious of changing the aspect as little as possible. This means that although the house has been adjusted inside to reduce its footprint, it will still look similar to other houses around it, thus maintaining its appeal to a mass market. This feature, coupled with the energy savings that the re-design could provide, could prove to be a successful model for Dale Alcock Homes.

Limitations

There were various limitations on my project. One of these was the aforementioned brief that I was working towards. This is something that always creates limitations for a designer. I felt that putting this restriction on the design process was necessary as it reflected the way that an interior designer actually has to work for a project. This brief and the idea of maintaining the mass-appeal of the design prevented me from making more radical changes to it. It is also important to remember that my research questions were approached in a conceptual way and from an interior designer's perspective. The role of an interior designer, as described by the Design Institute of Australia (DIA), is to “plan and detail commercial and residential building interiors for effective use with particular emphasis on space creation, space planning and factors that affect our responses to living and working environments” (2010, ¶. 1). This, coupled with the need to maintain a popularly acceptable façade, is why my research and design project was mainly concerned with internal space planning and the repercussions of the changes made rather than architectural concerns, such as solar passive design and sustainable building materials and orientation. In addition, the re-design of *The Amari* was undertaken in a purely conceptual way. To ensure that the design could actually be constructed would require collaboration with other professions. An interior designer typically “works as part of a team that may include architects, builders, project managers, engineering

consultants, shop fitters, cabinet makers, furniture suppliers and materials suppliers” (DIA, 2010, ¶6). The aim of the project was not to create a design to actually be built for a client but to explore the issues involved in a re-design that is focused on sustainability coupled with popular aesthetics.

Further Questions

With the help of other design professionals and more resources there are further questions that could be explored. First, it would be helpful to investigate how much energy, and therefore money, would be saved with the new *Amari* design. Looking at more sustainable materials and furniture would also be an interesting exercise, as would the exploration of a more adaptable design to future housing trends. The fourth bedroom could be designed in an even more flexible way by allowing it to be converted into a larger courtyard or another outdoor space. I feel this would allow the design to adapt to possible future changes in what is perceived as important for the resale of a house. A recent real-estate report (Louis Carr and Sons, 2010) has predicted that the traditional four bedroom, two bathroom house will become less the norm in Australia due to the rising property, land and energy prices and falling average household size. This could in turn have a negative effect on the resale of large houses. I think the idea of making *The Amari* adjustable to this possible future development would be an important avenue to explore.

Conclusion

Mass-produced project homes such as *The Amari* are often blamed for Australia’s poor performance in terms of energy use. This has understandably led to criticism, both in academia and the media, about the current trends of unconstrained urban sprawl and the new, uniquely Australian dream that is growing in size. I contend that in Australia today there is a lack of concern for the synergies associated with retailing the new and evolving suburban dream while incorporating sustainability into the concept. Instead of looking for ways to make popular project homes more sustainable, architects and theorists seem to ignore them completely in pursuit of an entirely new aesthetic. Architects appear to be designing houses that cannot actually

be a viable option in Western Australia when you consider how different they are to what is commonly popular in the eyes of the general public. This is in spite of the admission in Chapter Four by Abas that a sustainable house can be built with a popular aesthetic. Perhaps architects feel despondent about their ability to actually make a change. This is echoed by Abas when he says “none of us [architects] are idealistic enough to think that we can change the face of the Australian suburb. It’s not going to happen” (personal communication, September 6, 2010) and the result is that the current sustainable housing alternatives here in Australia are expensive and aesthetically at odds with what the ubiquitous project homes industry is offering consumers. These polarities need to be addressed in order for there to be a successful, adaptive, sustainable and affordable design alternative for the project homes industry in Australia.

My research explored what houses mean to Australian home-buyers and shows that any successful change needs to be incremental due to the appearance of a house having great symbolic importance in society. After researching what sustainable house design means, I discovered that the most simple and effective change would be to address the alarming trend of houses growing in terms of the size of their footprint and to find ways to reduce this while still appealing to a mass market. I approached the task from an interior design perspective because the market is largely happy with the exterior appearance of project homes, so this meant that working on the size of the internal spaces was the key. The result is a re-design that through a reduction in size creates many positive sustainable effects. Small changes were made to the design but the results are significant.

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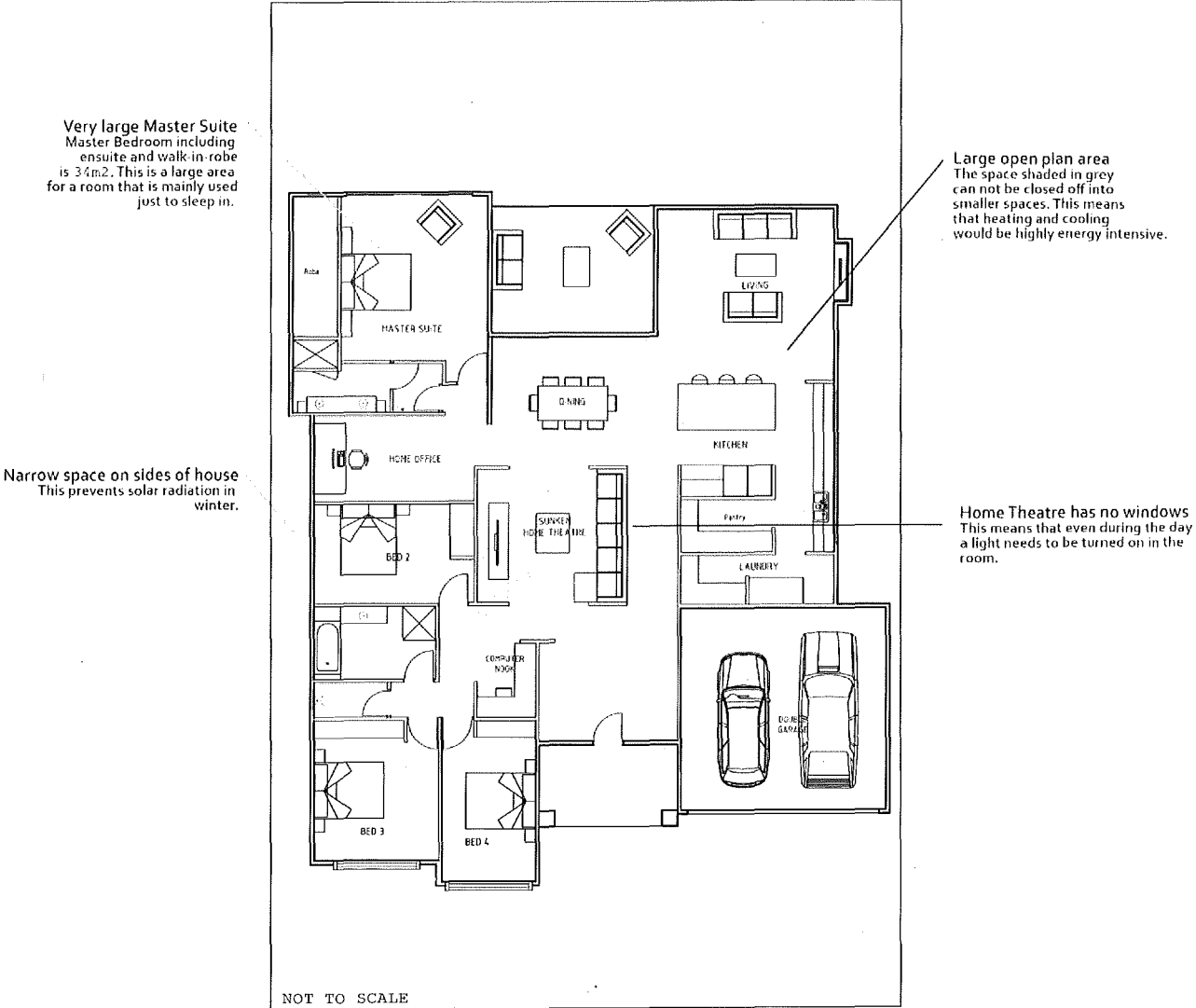
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DESIGN BRIEF

Project name	
Redesigning the great Australian dream	
Date	June 2010- October 2010
Client name	N/A
Client description	Typical clients for this design are a "family of four looking to build their first home and/or upsize from their existing house" ((A. Owen personal communication, August 11, 2010).
Address	N/A
Contact details	N/A
Brief outline of design and documentation needed	Re-design of existing Dale Alcock Homes design – <i>The Amari</i> to make the design more sustainable whilst retaining a similar aesthetic. Floor plans and 3D Sketchup images of main interior changes and external façade.
Define the budget available	\$228,000 - \$305,000 (Based on the price range defined by Dale Alcock Homes)
Estimation of fees and engagement letter	N/A
Type of project	Single storey detached house.
Size of project	4 bedroom – 2 bathroom house To be built on a block of land that is at least 17.5m wide, 29m long with a total area of at least 560sqm.
Requirements	<ul style="list-style-type: none"> - Make the design of the house more sustainable - Retain the same street front façade - Retain the open-plan feel to the living spaces - Retain an area to watch TV and DVDs
List of individual rooms to be included in design	<ul style="list-style-type: none"> - Master suite must have a walk-in-robe and ensuite - 4 bedrooms - 2 bathrooms including one bathtub - Pantry in kitchen - Laundry - 2 car garage - Kitchen and dining area - Living room

ORIGINAL *amari* DESIGN

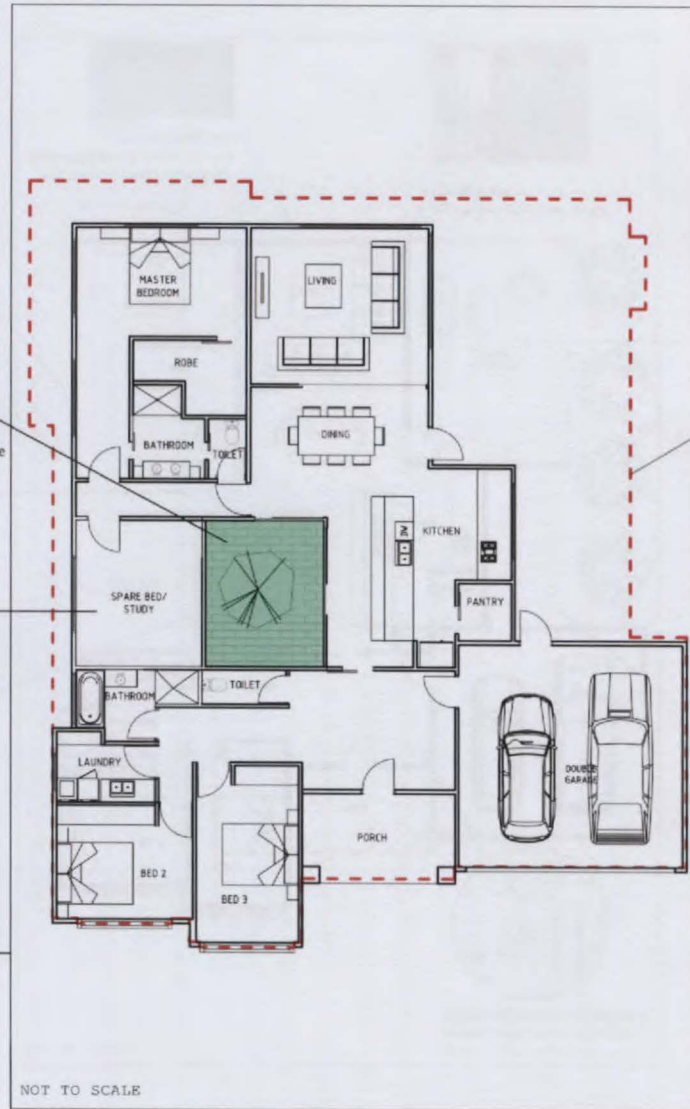


amari RE-DESIGN

Internal Courtyard
11 m²
Provides ventilation for passive cooling and natural light to minimise daytime energy use.

Multi-use space
The 4th bedroom has been relabelled a spare bed or study encouraging a more flexible use of the space.

Standard block outline
As recommended by Dale Alcock Homes for The Amari

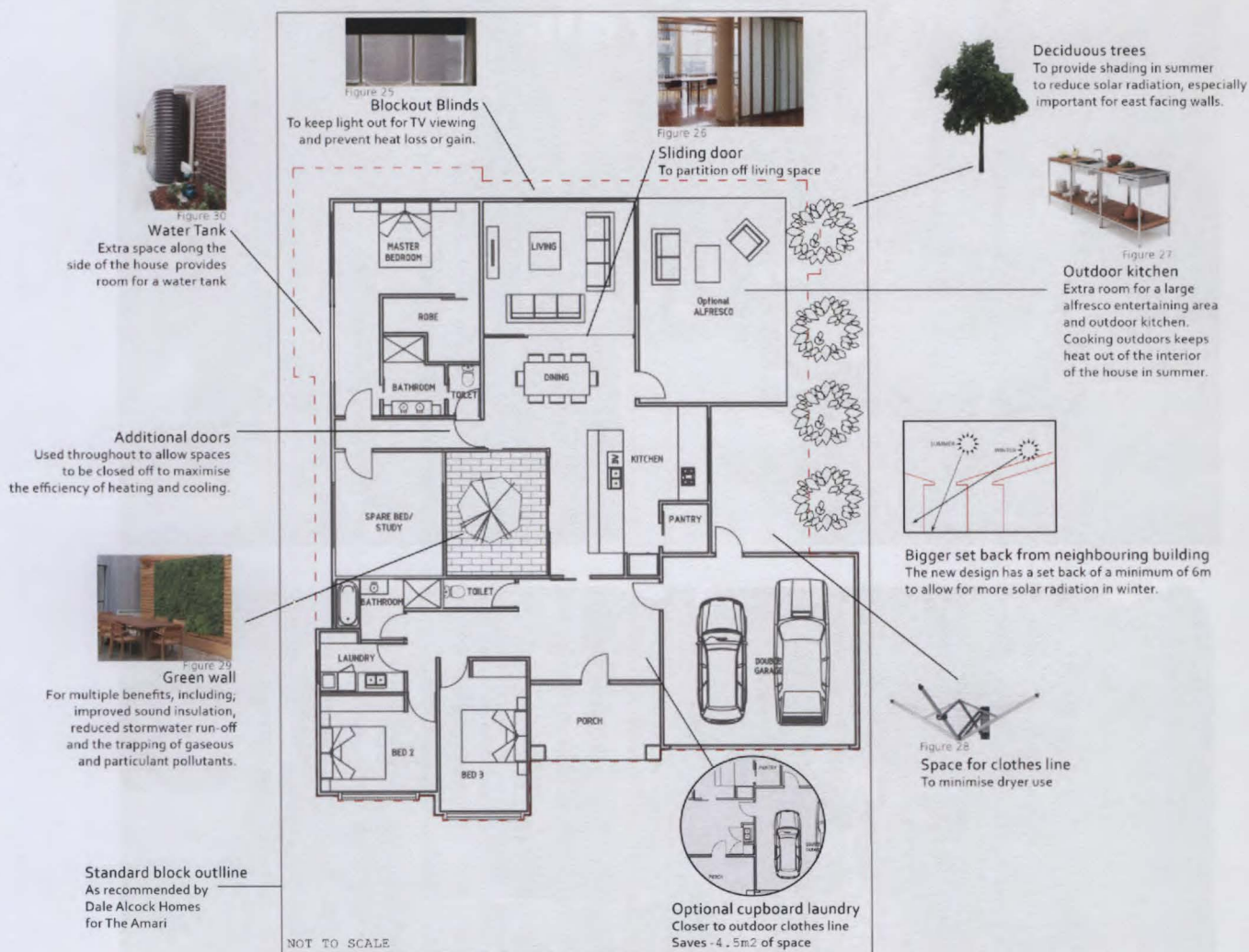


Perimeter of original Amari design.
Area of original design: 292m²
Area of new design: 222m²

Perimeter of standard block size
as recommended by Dale Alcock for the Amari
30m x 18m

Standard set back
6m for a R20 zoned building.

DESIGN outcomes



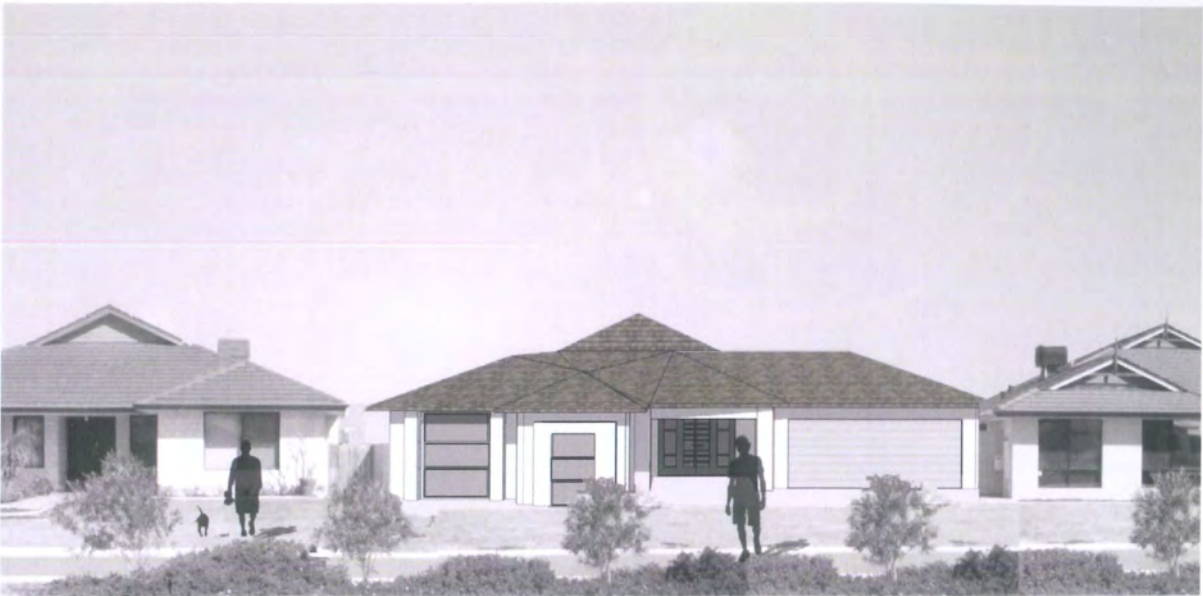
APPENDIX 5

Perspectives of the Courtyard



APPENDIX 6

The Original Façade



The Re-design Façade

